

Applicant : Donald W. Petersen et al.  
Serial No. : 09/915,997  
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Page : 7



Attorney's Docket No.: 06317-038002

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**Pending Claims After The Entering Of The Above Amendments**

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1. A bone graft substitute composition, consisting essentially of:  
calcium sulfate;  
a mixing solution; and  
a plasticizing substance.
2. The composition of claim 1, wherein the calcium sulfate comprises calcium sulfate hemihydrate.
3. The composition of claim 1, wherein the plasticizing substance comprises a cellulose derivative.
4. The composition of claim 1, wherein the plasticizing substance is selected from a group consisting of sodium carboxymethylcellulose, methylcellulose, hydroxypropyl methyl cellulose, hydroxypropyl cellulose, ethylcellulose, hydroxyethylcellulose, and cellulose acetate butyrate.
5. The composition of claim 1, wherein the plasticizing substance comprises hydroxypropyl methyl cellulose.
6. The composition of claim 1, wherein the plasticizing substance comprises hydroxypropyl cellulose.
7. The composition of claim 1, wherein the plasticizing substance comprises hyaluronic acid.
8. The composition of claim 1, wherein the plasticizing substance comprises methylcellulose.
9. The composition of claim 1, wherein the mixing solution is selected from a group consisting of sterile water, inorganic salt, and cationic surface active agent.
10. The composition of claim 9, wherein the cationic surface active agent is selected from a group consisting of sodium chloride, phosphate buffered saline, potassium chloride, sodium sulfate, ammonium sulfate, ammonium acetate, and sodium acetate.
11. The composition of claim 1, wherein the mixing solution comprises sterile water.
12. The composition of claim 1, wherein the composition does not comprise a polymer matrix.
13. The composition of claim 1, wherein the composition does not comprise bone.

14. The composition of claim 1, consisting essentially of:  
100 parts by weight of the calcium sulfate;  
about 1.5 to about 8 parts by weight of the plasticizing substance; and  
about 25 to about 65 parts by weight of the mixing solution.
15. The composition of claim 1, consisting essentially of:  
100 parts of the calcium sulfate;  
about 5.25 parts by weight of the plasticizing substance; and  
about 33.6 parts by weight of the mixing solution.
16. A bone graft substitute composition, consisting of:  
calcium sulfate hemihydrate;  
a mixing solution; and  
a plasticizing substance.
17. The composition of claim 16, wherein the plasticizing substance comprises a cellulose derivative.
18. The composition of claim 16, wherein the plasticizing substance is selected from a group consisting of sodium carboxymethylcellulose, methylcellulose, hydroxypropyl methyl cellulose, hydroxypropyl cellulose, ethylcellulose, hydroxyethylcellulose, and cellulose acetate butyrate.
19. The composition of claim 16, wherein the plasticizing substance comprises hydroxypropyl methyl cellulose.
20. The composition of claim 16, wherein the plasticizing substance comprises hydroxypropyl cellulose.
21. The composition of claim 16, wherein the plasticizing substance comprises hyaluronic acid.
22. The composition of claim 16, wherein the plasticizing substance comprises methylcellulose.
23. The composition of claim 16, wherein the mixing solution is selected from a group consisting of sterile water, inorganic salt, and cationic surface active agent.
24. The composition of claim 23, wherein the cationic surface active agent is selected from a group consisting of sodium chloride, phosphate buffered saline, potassium chloride, sodium sulfate, ammonium sulfate, ammonium acetate, and sodium acetate.
25. The composition of claim 16, wherein the mixing solution comprises sterile water.

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Filed : July 26, 2001

Page : 9

26. The composition of claim 16, consisting of:  
100 parts by weight of the calcium sulfate hemihydrate;  
about 1.5 to about 8 parts by weight of the plasticizing substance; and  
about 25 to about 65 parts by weight of the mixing solution.

27. The composition of claim 16, consisting of:  
100 parts of the calcium sulfate hemihydrate;  
about 5.25 parts by weight of the plasticizing substance; and  
about 33.6 parts by weight of the mixing solution.